

What is claimed is:

1. A packet receiving apparatus having a plurality of receiving buffers to receive packets from a plurality of transmitting nodes located on a network for reproduction of event sequence data through output channels, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the apparatus comprising:

an unpacketizing section that extracts the event sequence data and the timestamp from the packet;

a writing section that distributes the extracted event sequence data to the plurality of the receiving buffers for writing the event sequence data into the receiving buffers; and

a reading section that reads out the event sequence data from the receiving buffers in accordance with the extracted timestamp.

2. The packet receiving apparatus according to claim 1, wherein the plurality of the receiving buffers are separately allotted to the plurality of the transmitting nodes and are further assigned to channels of the event sequence data contained in each packet of each transmitting node, and the writing section distributes the event sequence data of one packet from one transmitting node to a corresponding one of the receiving buffers according to information which is contained in said one

packet and which identifies said one transmitting node and the channel.

3. The packet receiving apparatus according to claim 1, further comprising a patch section that allocates the event sequence data read from the receiving buffers to the output channels according to either of header information contained in the packet and setting information inputted from outside.

4. The packet receiving apparatus according to claim 1, wherein the reading section includes a time adjust section that operates when a target time indicated by the timestamp extracted from one packet coincides with a current time indicated by an internal cycle timer for reading out the event sequence data extracted from said one buffer and written in the receiving buffer to thereby adjust a reproduction timing of the event sequence data by the timestamp.

5. A packet receiving apparatus having a plurality of receiving buffers to receive packets from a plurality of transmitting nodes located on a network for reproduction of event sequence data, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the apparatus comprising:

a timestamp output section that selects a predetermined one of packets which are received sequentially for retrieving a timestamp contained in the predetermined packet;

a reproduction timing clock generating section that generates a reproduction timing clock used for synchronously reproducing the event sequence data contained in the sequentially received packets;

a comparing section that compares a time indicated by the timestamp retrieved from the predetermined packet with a current time indicated by an internal cycle timer so as to phase-lock the reproduction timing clock to the time of the timestamp; and

a data output section that reproduces the event sequence data contained in the sequentially received packets in synchronization to the reproduction timing clock.

6. The packet receiving apparatus according to claim 5, wherein the timestamp output section selects a predetermined packet which is transmitted from a specific one of the transmitting nodes, and retrieves the timestamp from the selected packet to provide the retrieved timestamp to the comparing section.

7. The packet receiving apparatus according to claim 5, wherein the timestamp output section comprises a first timestamp output section that retrieves a timestamp contained in a predetermined packet which is transmitted from a specific one of the transmitting nodes, and a second timestamp output section that retrieves another timestamp contained in a packet which is transmitted from other transmitting node than the specific transmitting node, and wherein the comparing section comprises

a first comparing section that operates when a time indicated by the timestamp retrieved by the first timestamp output section coincides with the current time of the internal cycle timer for enabling the data output section to produce the event sequence data which is contained in the predetermined packet of the specific transmitting node and which corresponds to the timestamp retrieved by the first timestamp output section, and a second comparing section that operates when a time indicated by the timestamp retrieved by the second timestamp output section coincides with the current time of the internal cycle timer for enabling the data output section to produce the event sequence data which is contained in the packet of the other transmitting node than the specific transmitting node and which corresponds to the timestamp retrieved by the second timestamp output section.

8. A packet receiving apparatus having a plurality of data buffers to receive packets from a plurality of transmitting nodes located on a network for reproduction of event sequence data, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the apparatus comprising:

a pair of first and second timestamp buffers;

an unpacketizing section that extracts event sequence data and timestamps from received packets;

a writing section that distributes the extracted event sequence data to the plurality of the data buffers for writing

the event sequence data into the data buffers, the writing section further writing a timestamp extracted from a particular packet into the first timestamp buffer and writing other timestamp extracted from other packet than the particular packet into the second timestamp buffer; and

a reading section that reads out the event sequence data from the data buffers in accordance with the timestamps written in the first timestamp buffer and the second timestamp buffer.

9. The packet receiving apparatus according to claim 8, further comprising a reproduction timing clock generating section that generates a reproduction timing clock used for synchronous reproduction of the event sequence data from each of the packets, and a comparing section that compares a time indicated by the timestamp extracted from the particular packet transmitted from a particular one of the transmitting node and written into the first timestamp buffer with a current time indicated by an internal cycle timer for phase-locking the reproduction timing clock, whereby the reading section reproduces the event sequence data from the data buffers in synchronization to the reproduction timing clock.

10. The packet receiving apparatus according to claim 9, wherein the reading section includes a time adjusting section that operates when the time indicated by the timestamp written in the first timestamp buffer coincides with the current time indicated by the internal cycle timer for reading out first

event sequence data of the particular packet from the data buffer to thereby adjust reproduction timing of the first event sequence data by the timestamp written in the first timestamp buffer, and that operates when the time indicated by the timestamp written in the second timestamp buffer coincides with the current time indicated by the internal cycle timer for reading out second event sequence data of the other packet than the particular packet from the data buffer to thereby adjust reproduction timing of the second event sequence data by the timestamp written in the second timestamp buffer.

11. A packet receiving apparatus provided on a receiving node for receiving packets from a plurality of transmitting nodes located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the apparatus comprising:

- a timestamp output section that retrieves a timestamp contained in a packet received from a transmitting node;

- a data output section that reproduces event sequence data contained in the same packet received from the transmitting node;

- an offset setting section that sets an offset time for the receiving node relative to the transmitting node and adds the offset time to a time indicated by the timestamp retrieved by the timestamp output section; and

a reproduction time control section that operates when the time of the timestamp added with the offset time coincides with a current time indicated by an internal cycle timer for controlling the data output section to effect synchronous reproduction of the event sequence data contained in the same packet as the timestamp.

12. The packet receiving apparatus according to claim 11, wherein the timestamp output section has a first timestamp buffer for storing a primary timestamp retrieved from a packet which is transmitted from a particular one of the transmitting nodes, and a second timestamp buffer for storing a secondary timestamp retrieved from another packet which is transmitted from other transmitting node than the particular transmitting node, and wherein the offset setting section adds the time indicated by the primary timestamp with an offset time set relative to the particular transmitting node, and adds the time indicated by the secondary timestamp with another offset time set relative to the other transmitting node.

13. The packet receiving apparatus according to claim 11, wherein the timestamp output section adds an offset time, which is set by operating an external input provided on the receiving node, to the time indicated by the timestamp.

14. A packet receiving apparatus for receiving a packet from a transmitting node located on a network, the packet containing

at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the apparatus comprising:

a reproduction timing clock generating section generates a reproduction timing clock used for synchronous reproduction of the event sequence data contained in the packet based on the timestamp contained in the packet;

an output terminal provided for outputting the generated reproduction timing clock externally;

an input terminal provided for inputting an external reproduction timing clock;

a data output section that reproduces event sequence data contained in the packet received from the transmitting node in synchronization to either of the generated reproduction timing clock and the external reproduction timing clock; and

a reproduction timing clock setting section that operates in a first mode for feeding the reproduction timing clock generated by the reproduction timing clock generating section to the data output section and to the output terminal, and that operates in a second mode for feeding the external reproduction timing clock inputted from the input terminal to the data output section.

15. A packet receiving apparatus comprising a plurality of packet handlers including a master packet handler and a slave packet handler for cooperatively receiving packets from transmitting nodes located on a network, the packet containing



at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, wherein each packet handler comprises:

- an unpacketizing section that extracts the event sequence data and the timestamp from the packet;

- a receiving buffer that is provided for temporarily storing the event sequence data;

- a writing section that writes the extracted event sequence data into the receiving buffer; and

- a reading section that reads out the event sequence data from the receiving buffer in synchronization to a reproduction timing clock to reproduce the event sequence data,

wherein the master packet handler generates the reproduction timing clock in accordance with the extracted timestamp and provides the generated reproduction timing clock to the slave packet handler, and

wherein the master packet handler operates when the receiving buffer has no space to store the event sequence data for allocating the event sequence data to receiving buffer of the slave packet handler.

16. A packet transmitting apparatus for transmitting packets to receiving nodes located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the packet transmitting apparatus comprising:

a packetizing section that arranges the event sequence data into data blocks and adds thereto a timestamp so as to sequentially produce packets;

a transmitting section that sequentially transmits the packets; and

an error processing section that operates when an error is detected during production of the packets for stopping transmission of a regular packet containing event sequence data and for generating and transmitting a special packet containing a message indicative of occurrence of the error.

17. The packet transmitting apparatus according to claim 16, wherein the error processing section includes a computation section that computes an input timing period of the data block based on a time of the timestamp, so that the error processing section operates when the computed input timing period deviates from a predetermined time period over an allowable range for detecting the error.

18. A packet receiving apparatus having a receiving buffer to receive packets from transmitting nodes located on a network for reproduction of event sequence data, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the apparatus comprising:

an unpacketizing section that extracts the event sequence data and the timestamp from the packet;

a writing section that writes the extracted event sequence data into the receiving buffer;

a reading section that reproduces the event sequence data from the receiving buffer in synchronization to the extracted timestamp; and

an error processing section that operates when detecting occurrence of a timing error based on the extracted timestamp and other error in either of the writing section and the reading section for muting synchronous reproduction of the event sequence data.

19. A packet transmitting apparatus for transmitting packets to receiving nodes located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the packet transmitting apparatus comprising:

an input section that sequentially inputs event sequence data from an external data source in response to an input clock signal having a leading edge and a trailing edge arranged at a predetermined period;

a fast packetizing section that generates a packet of the inputted event sequence data in response to the leading edge of the input clock signal and generates another packet in response to the trailing edge subsequent to the leading edge, thereby successively generating packets at a rate twice as fast as the input clock signal, and that adds the timestamp every time the predetermined number of data blocks are packetized; and

a transmitting section that sequentially transmits the packets generated by the fast packetizing section.

20. The packet transmitting apparatus according to claim 19, wherein the input section sequentially inputs event sequence data which is sampled at a double rate by a sampling clock signal having a half period of the input clock signal.

21. The packet transmitting apparatus according to claim 20, wherein the input section can switch between a fast sampling mode where the event sequence data is sampled at a double rate by a sampling clock signal having a half period of the input clock signal and a regular sampling mode where the event sequence data is sampled at a regular rate by another sampling clock signal having the same period as the input clock signal, and further comprising a regular packetizing section that operates under the regular sampling mode for generating a packet of the inputted event sequence data in response to only one of the leading edge and the trailing edge of the input clock signal and that adds the timestamp every time the predetermined number of data blocks are packetized by the regular packetizing section.

22. A packet receiving apparatus for receiving packets from transmitting nodes located on a network to reproduce event sequence data, the packet containing at least one data block composed of at least one event sequence data and a timestamp

added per a predetermined number of data blocks, the packet receiving apparatus comprising:

a receiving section that sequentially receives packets transmitted from one or more of the transmitting node;

a fast unpacketizing section that operates in response to a reproduction clock signal having a leading edge and a trailing edge arranged at a predetermined period for retrieving event sequence data from a packet at the leading edge of the reproduction clock signal and for retrieving event sequence data from a next packet at the trailing edge subsequent to the leading edge, thereby successively unpacketizing the packets at a rate twice as fast as the reproduction clock signal; and

a data output section that reproduces the event sequence data in response to the reproduction clock signal which is synchronized to the timestamps contained in the received packets.

23. The packet receiving apparatus according to claim 22, further comprising a regular unpacketizing section that retrieves event sequence data from a packet at only one of the leading edge and the trailing edge of the reproduction clock signal, thereby successively unpacketizing the packets at the same rate as the reproduction clock signal, and a switching section that switches between the fast unpacketizing section and the regular unpacketizing section according to information which is contained in the received packets and which indicates a sampling period of the event sequence data.

24. A packet receiving apparatus for receiving packets from one or more of transmitting nodes located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the apparatus comprising:

a timestamp output section that retrieves a timestamp from a packet which is received from one of the transmitting nodes;

a reproduction timing clock generating section that generates a reproduction timing clock used for synchronously reproducing the event sequence data contained in the received packet;

a comparing section that compares a time indicated by the timestamp retrieved by the timestamp output section with a current time indicated by an internal cycle timer so as to phase-lock the reproduction timing clock to the time of the timestamp; and

a data output section that reproduces the event sequence data contained in the received packets in synchronization to the reproduction timing clock.

25. A packet receiving apparatus for receiving packets from one or more of transmitting nodes located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the apparatus comprising:

a timestamp output section that retrieves a timestamp from a packet which is received from the transmitting node;

a reproduction timing clock generating section that generates a reproduction timing clock which is synchronized to the retrieved timestamp;

a data output section that reproduces the event sequence data contained in packets received from each transmitting node in response to the reproduction timing clock; and

a time adjusting section that operates when a time indicated by the timestamp retrieved by the timestamp output section coincides with a current time indicated by an internal cycle timer for controlling the data output section to reproduce a data block of the event sequence data which is contained in the same packet as the timestamp and which corresponds to the time indicated by the timestamp, wherein

the data output section has a plurality of receiving buffers for writing therein the event sequence data, the receiving buffers being separately allotted to different transmitting nodes and further being assigned to different channels of the event sequence data contained in each packet, and for reproducing the event sequence data from the receiving buffers a channel by channel in response to the reproduction timing clock.

26. A packet receiving apparatus for receiving a packet from one or more of transmitting node located on a network, the packet containing at least one data block composed of at least

one event sequence data and a timestamp added per a predetermined number of data blocks, the apparatus comprising:

a reproduction timing clock generating section that generates a reproduction timing clock in synchronization to the timestamp contained in the packet;

a data output section that reproduces each data block of event sequence data contained in the packet received from the transmitting node in response to the reproduction timing clock; and

an output terminal provided to output the generated reproduction timing clock for external use of the reproduction timing clock.

27. A method of receiving packets with a plurality of receiving buffers from a plurality of transmitting nodes located on a network for reproduction of event sequence data through output channels, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the method comprising the steps of:

extracting the event sequence data and the timestamp from the packet;

distributing the extracted event sequence data to the plurality of the receiving buffers for writing the event sequence data into the receiving buffers; and

reading out the event sequence data from the receiving buffers in accordance with the extracted timestamp.



28. A method of receiving packets from one or more of transmitting nodes located on a network for reproduction of event sequence data, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the method comprising the steps of:

selecting a predetermined one of packets which are received sequentially for retrieving a timestamp contained in the predetermined packet;

generating a reproduction timing clock used for synchronously reproducing the event sequence data contained in the sequentially received packets;

comparing a time indicated by the timestamp retrieved from the predetermined packet with a current time indicated by an internal cycle timer so as to phase-lock the reproduction timing clock to the time of the timestamp; and

reproducing the event sequence data contained in the sequentially received packets in synchronization to the reproduction timing clock.

29. A method of receiving packets with a plurality of data buffers and a pair of first and second timestamp buffers from a plurality of transmitting nodes located on a network for reproduction of event sequence data, the packet containing at least one data block composed of at least one event sequence

data and a timestamp added per a predetermined number of data blocks, the method comprising the steps of:

- extracting event sequence data and timestamps from received packets;

- distributing the extracted event sequence data to the plurality of the data buffers for writing the event sequence data into the data buffers;

- further writing a timestamp extracted from a particular packet into the first timestamp buffer and writing other timestamp extracted from other packet than the particular packet into the second timestamp buffer; and

- reading out the event sequence data from the data buffers in accordance with the timestamps written in the first timestamp buffer and the second timestamp buffer.

30. A method of receiving packets at a receiving node from a plurality of transmitting nodes located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the method comprising the steps of:

- retrieving a timestamp contained in a packet received from a transmitting node;

- reproducing event sequence data contained in the same packet received from the transmitting node;

setting an offset time for the receiving node relative to the transmitting node and adding the offset time to a time indicated by the retrieved timestamp; and

effecting synchronous reproduction of the event sequence data contained in the same packet as the timestamp when the time of the timestamp added with the offset time coincides with a current time indicated by an internal cycle timer.

31. A method of receiving a packet from a transmitting node located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the method comprising the steps of:

generating a reproduction timing clock used for synchronous reproduction of the event sequence data contained in the packet based on the timestamp contained in the packet;

outputting the generated reproduction timing clock externally from an output terminal;

inputting an external reproduction timing clock into an input terminal;

reproducing event sequence data contained in the packet received from the transmitting node by means of a data output device in synchronization to either of the generated reproduction timing clock and the external reproduction timing clock; and

feeding the generated reproduction timing clock to the data output device and to the output terminal in a first mode; and

otherwise feeding the external reproduction timing clock inputted from the input terminal to the data output device in a second mode.

32. A method of receiving packets from transmitting nodes located on a network by means of a plurality of packet handlers including a master packet handler and a slave packet handler, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the method comprising the steps of:

extracting the event sequence data and the timestamp from the packet;

writing the extracted event sequence data into a receiving buffer provided in the master packet handler;

reading out the event sequence data from the receiving buffer in synchronization to a reproduction timing clock to reproduce the event sequence data;

operating the master packet handler to generate the reproduction timing clock in accordance with the extracted timestamp and to provide the generated reproduction timing clock to the slave packet handler; and

operating the master packet handler when the receiving buffer thereof has no space to store the event sequence data

for allocating the event sequence data to a receiving buffer of the slave packet handler.

33. A method of transmitting packets to receiving nodes located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the method comprising the steps of:

- arranging the event sequence data into data blocks and adding thereto a timestamp so as to sequentially produce packets;

- sequentially transmitting the packets; and

- detecting an error during production of the packets for stopping transmission of a regular packet containing event sequence data and for generating and transmitting a special packet containing a message indicative of occurrence of the error.

34. A method of receiving packets with a receiving buffer from transmitting nodes located on a network for reproduction of event sequence data, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the method comprising the steps of:

- extracting the event sequence data and the timestamp from the packet;

writing the extracted event sequence data into the receiving buffer;

reproducing the event sequence data from the receiving buffer in synchronization to the extracted timestamp; and

detecting occurrence of a timing error based on the extracted timestamp and other error in either of the writing step and the reproducing step for muting synchronous reproduction of the event sequence data.

35. A method of transmitting packets to receiving nodes located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the method comprising the steps of:

sequentially inputting event sequence data from an external data source in response to an input clock signal having a leading edge and a trailing edge arranged at a predetermined period;

generating a packet of the inputted event sequence data in response to the leading edge of the input clock signal and generating another packet in response to the trailing edge subsequent to the leading edge, thereby successively generating packets at a rate twice as fast as the input clock signal;

adding the timestamp every time the predetermined number of data blocks are packetized; and

sequentially transmitting the packets generated by the fast packetizing section.

36. A method of receiving packets from transmitting nodes located on a network to reproduce event sequence data, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the method comprising the steps of:

sequentially receiving packets transmitted from one or more of the transmitting node;

using a reproduction clock signal having a leading edge and a trailing edge arranged at a predetermined period for retrieving event sequence data from a packet at the leading edge of the reproduction clock signal and for retrieving event sequence data from a next packet at the trailing edge subsequent to the leading edge, thereby successively unpacketizing the packets at a rate twice as fast as the reproduction clock signal; and

reproducing the event sequence data in response to the reproduction clock signal which is synchronized to the timestamps contained in the received packets.

37. A method of receiving packets from one or more of transmitting nodes located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the method comprising the steps of:

retrieving a timestamp from a packet which is received from one of the transmitting nodes;

generating a reproduction timing clock used for synchronously reproducing the event sequence data contained in the received packet;

comparing a time indicated by the retrieved timestamp with a current time indicated by an internal cycle timer so as to phase-lock the reproduction timing clock to the time of the timestamp; and

reproducing the event sequence data contained in the received packets in synchronization to the reproduction timing clock.

38. A method of receiving packets from one or more of transmitting nodes located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the method comprising the steps of:

retrieving a timestamp from a packet which is received from the transmitting node;

generating a reproduction timing clock which is synchronized to the retrieved timestamp;

reproducing the event sequence data contained in packets received from each transmitting node in response to the reproduction timing clock; and

adjustively reproducing a data block of the event sequence data which is contained in the same packet as the timestamp and



which corresponds to the time indicated by the timestamp when a time indicated by the retrieved timestamp coincides with a current time indicated by an internal cycle timer,

wherein the reproducing step uses a plurality of receiving buffers for writing therein the event sequence data, the receiving buffers being separately allotted to different transmitting nodes and further being assigned to different channels of the event sequence data contained in each packet, and for reproducing the event sequence data from the receiving buffers a channel by channel in response to the reproduction timing clock.

39. A method of receiving a packet from one or more of transmitting node located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, the method comprising the steps of:

generating a reproduction timing clock in synchronization to the timestamp contained in the packet;

reproducing each data block of event sequence data contained in the packet received from the transmitting node in response to the reproduction timing clock; and

outputting the generated reproduction timing clock from an output terminal for external use of the reproduction timing clock.

40. A medium for use in a packet receiving machine having a CPU for receiving packets by a plurality of receiving buffers from a plurality of transmitting nodes located on a network for reproduction of event sequence data through output channels, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, wherein the medium contains program instructions executable by the CPU for causing the packet receiving machine to perform a process comprising the steps of:

extracting the event sequence data and the timestamp from the packet;

distributing the extracted event sequence data to the plurality of the receiving buffers for writing the event sequence data into the receiving buffers; and

reading out the event sequence data from the receiving buffers in accordance with the extracted timestamp.

41. A medium for use in a packet receiving machine having a CPU for receiving packets from one or more of transmitting nodes located on a network for reproduction of event sequence data, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, wherein the medium contains program instructions executable by the CPU for causing the packet receiving machine to perform a process comprising the steps of:

selecting a predetermined one of packets which are received sequentially for retrieving a timestamp contained in the predetermined packet;

generating a reproduction timing clock used for synchronously reproducing the event sequence data contained in the sequentially received packets;

comparing a time indicated by the timestamp retrieved from the predetermined packet with a current time indicated by an internal cycle timer so as to phase-lock the reproduction timing clock to the time of the timestamp; and

reproducing the event sequence data contained in the sequentially received packets in synchronization to the reproduction timing clock.

42. A medium for use in a packet receiving machine having a CPU for receiving packets by a plurality of data buffers and a pair of first and second timestamp buffers from a plurality of transmitting nodes located on a network for reproduction of event sequence data, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, wherein the medium contains program instructions executable by the CPU for causing the packet receiving machine to perform a process comprising the steps of:

extracting event sequence data and timestamps from received packets;

distributing the extracted event sequence data to the plurality of the data buffers for writing the event sequence data into the data buffers;

further writing a timestamp extracted from a particular packet into the first timestamp buffer and writing other timestamp extracted from other packet than the particular packet into the second timestamp buffer; and

reading out the event sequence data from the data buffers in accordance with the timestamps written in the first timestamp buffer and the second timestamp buffer.

43. A medium for use in a packet receiving machine having a CPU for receiving packets at a receiving node from a plurality of transmitting nodes located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, wherein the medium contains program instructions executable by the CPU for causing the packet receiving machine to perform a process comprising the steps of:

retrieving a timestamp contained in a packet received from a transmitting node;

reproducing event sequence data contained in the same packet received from the transmitting node;

setting an offset time for the receiving node relative to the transmitting node and adding the offset time to a time indicated by the retrieved timestamp; and

effecting synchronous reproduction of the event sequence data contained in the same packet as the timestamp when the time of the timestamp added with the offset time coincides with a current time indicated by an internal cycle timer.

44. A medium for use in a packet receiving machine having a CPU for receiving a packet from a transmitting node located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, wherein the medium contains program instructions executable by the CPU for causing the packet receiving machine to perform a process comprising the steps of:

generating a reproduction timing clock used for synchronous reproduction of the event sequence data contained in the packet based on the timestamp contained in the packet;

outputting the generated reproduction timing clock externally from an output terminal;

inputting an external reproduction timing clock into an input terminal;

reproducing event sequence data contained in the packet received from the transmitting node by means of a data output device in synchronization to either of the generated reproduction timing clock and the external reproduction timing clock; and

feeding the generated reproduction timing clock to the data output device and to the output terminal in a first mode; and

otherwise feeding the external reproduction timing clock inputted from the input terminal to the data output device in a second mode.

45. A medium for use in a packet receiving machine for receiving packets from transmitting nodes located on a network by means of a plurality of packet handlers including a master packet handler and a slave packet handler, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, wherein the medium contains program instructions executable by the CPU for causing the packet receiving machine to perform a process comprising the steps of:

extracting the event sequence data and the timestamp from the packet;

writing the extracted event sequence data into a receiving buffer provided in the master packet handler;

reading out the event sequence data from the receiving buffer in synchronization to a reproduction timing clock to reproduce the event sequence data;

operating the master packet handler to generate the reproduction timing clock in accordance with the extracted timestamp and to provide the generated reproduction timing clock to the slave packet handler; and

operating the master packet handler when the receiving buffer thereof has no space to store the event sequence data for allocating the event sequence data to a receiving buffer of the slave packet handler.

46. A medium for use in a packet transmitting machine for transmitting packets to receiving nodes located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, wherein the medium contains program instructions executable by the CPU for causing the packet transmitting machine to perform a process comprising the steps of:

arranging the event sequence data into data blocks and adding thereto a timestamp so as to sequentially produce packets;

sequentially transmitting the packets; and

detecting an error during production of the packets for stopping transmission of a regular packet containing event sequence data and for generating and transmitting a special packet containing a message indicative of occurrence of the error.

47. A medium for use in a packet receiving machine having a CPU for receiving packets by a receiving buffer from transmitting nodes located on a network for reproduction of event sequence data, the packet containing at least one data block composed of

at least one event sequence data and a timestamp added per a predetermined number of data blocks, wherein the medium contains program instructions executable by the CPU for causing the packet receiving machine to perform a process comprising the steps of:

extracting the event sequence data and the timestamp from the packet;

writing the extracted event sequence data into the receiving buffer;

reproducing the event sequence data from the receiving buffer in synchronization to the extracted timestamp; and

detecting occurrence of a timing error based on the extracted timestamp and other error in either of the writing step and the reproducing step for muting synchronous reproduction of the event sequence data.

48. A medium for use in a packet transmitting machine having a CPU for transmitting packets to receiving nodes located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, wherein the medium contains program instructions executable by the CPU for causing the packet transmitting machine to perform a process comprising the steps of:

sequentially inputting event sequence data from an external data source in response to an input clock signal



having a leading edge and a trailing edge arranged at a predetermined period;

generating a packet of the inputted event sequence data in response to the leading edge of the input clock signal and generating another packet in response to the trailing edge subsequent to the leading edge, thereby successively generating packets at a rate twice as fast as the input clock signal;

adding the timestamp every time the predetermined number of data blocks are packetized; and

sequentially transmitting the packets generated by the fast packetizing section.

49. A medium for use in a packet receiving machine having a CPU for receiving packets from transmitting nodes located on a network to reproduce event sequence data, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, wherein the medium contains program instructions executable by the CPU for causing the packet receiving machine to perform a process comprising the steps of:

sequentially receiving packets transmitted from one or more of the transmitting node;

using a reproduction clock signal having a leading edge and a trailing edge arranged at a predetermined period for retrieving event sequence data from a packet at the leading edge of the reproduction clock signal and for retrieving event sequence data from a next packet at the trailing edge

subsequent to the leading edge, thereby successively unpacketizing the packets at a rate twice as fast as the reproduction clock signal; and

reproducing the event sequence data in response to the reproduction clock signal which is synchronized to the timestamps contained in the received packets.

50. A medium for use in a packet receiving machine having a CPU for receiving packets from one or more of transmitting nodes located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, wherein the medium contains program instructions executable by the CPU for causing the packet receiving machine to perform a process comprising the steps of:

retrieving a timestamp from a packet which is received from one of the transmitting nodes;

generating a reproduction timing clock used for synchronously reproducing the event sequence data contained in the received packet;

comparing a time indicated by the retrieved timestamp with a current time indicated by an internal cycle timer so as to phase-lock the reproduction timing clock to the time of the timestamp; and

reproducing the event sequence data contained in the received packets in synchronization to the reproduction timing clock.

51. A medium for use in a packet receiving machine having a CPU for receiving packets from one or more of transmitting nodes located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, wherein the medium contains program instructions executable by the CPU for causing the packet receiving machine to perform a process comprising the steps of:

retrieving a timestamp from a packet which is received from the transmitting node;

generating a reproduction timing clock which is synchronized to the retrieved timestamp;

reproducing the event sequence data contained in packets received from each transmitting node in response to the reproduction timing clock; and

adjustively reproducing a data block of the event sequence data which is contained in the same packet as the timestamp and which corresponds to the time indicated by the timestamp when a time indicated by the retrieved timestamp coincides with a current time indicated by an internal cycle timer,

wherein the reproducing step uses a plurality of receiving buffers for writing therein the event sequence data, the receiving buffers being separately allotted to different transmitting nodes and further being assigned to different channels of the event sequence data contained in each packet, and for reproducing the event sequence data from the receiving

buffers a channel by channel in response to the reproduction timing clock.

52. A medium for use in a packet receiving machine having a CPU for receiving a packet from one or more of transmitting node located on a network, the packet containing at least one data block composed of at least one event sequence data and a timestamp added per a predetermined number of data blocks, wherein the medium contains program instructions executable by the CPU for causing the packet receiving machine to perform a process comprising the steps of:

generating a reproduction timing clock in synchronization to the timestamp contained in the packet;

reproducing each data block of event sequence data contained in the packet received from the transmitting node in response to the reproduction timing clock; and

outputting the generated reproduction timing clock from an output terminal for external use of the reproduction timing clock.